

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property  
Organization  
International Bureau



10/534509



(43) International Publication Date  
27 May 2004 (27.05.2004)

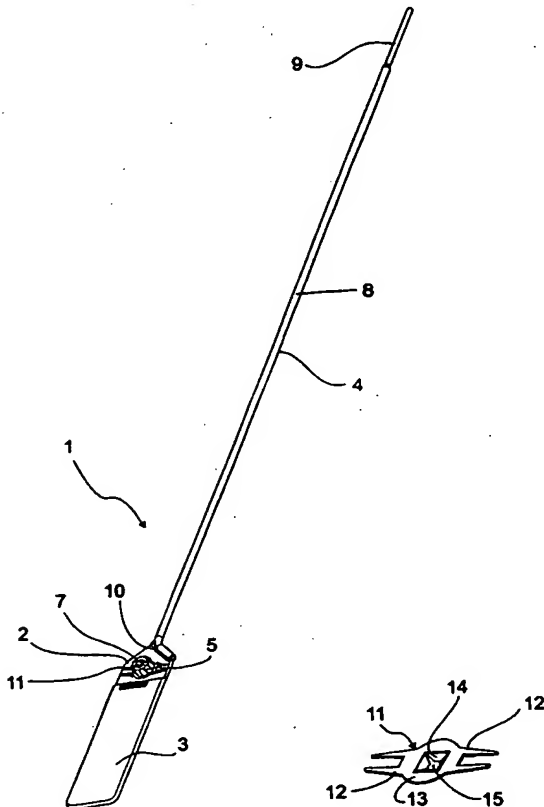
PCT

(10) International Publication Number  
WO 2004/044871 A1

- (51) International Patent Classification<sup>7</sup>: G09F 3/03, 3/14, B65D 63/10
- (21) International Application Number: PCT/BR2003/000165
- (22) International Filing Date: 13 November 2003 (13.11.2003)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data: PI0204644-0 13 November 2002 (13.11.2002) BR
- (71) Applicant (for all designated States except US): ELC PRODUTOS DE SEGURANCA INDÚSTRIA E COMÉRCIO LTDA. [BR/BR]; Rua São Luiz Gonzaga, 912, B- 20910-060 Rio de Janeiro-RJ (BR).
- (72) Inventor; and
- (73) Inventor/Applicant (for US only): DE LIMA CASTRO, André [BR/BR]; Rua Othon Bezerra de Mello, 40, Horto, Rio de Janeiro (BR).
- (74) Agent: DANNEMANN, SIEMSEN, BIGLER & IPANEMA MOREIRA; Caixa Postal 2142, Rua Marquês de Olinda, 70, B-22251-040 Rio de Janeiro (BR).
- (81) Designated States (national): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (regional): ARIPO patent (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),

[Continued on next page]

(54) Title: TIE-TYPE SECURITY SEAL



(57) Abstract: A tie-type security seal is described that comprises a body (2) of thermoplastic material with a passage (7) therethrough, a metallic insert element (11) that is fixed in the passage and has at least one opening (15) aligned therewith, as well as a locking tooth (14). An elongated strip of thermoplastic material (4) is integral, at one end, with the body (2) and has another free end for insertion through the passage (7) in a first direction where it is locked by the tooth (14) against removal from the cavity in the opposite direction, the body and strip having been manufactured by a plastic injection operation. In accordance with the invention, the seal is not only highly secure against tampering, but can also easily be mass manufactured since the metallic insert element (11) is incorporated into the body of thermoplastic material (2) during the injection operation.

WO 2004/044871 A1